

# Dell Vostro 2420 Owner's Manual

Regulatory Model: P22G  
Regulatory Type: P22G004



# Notes, Cautions, and Warnings



**NOTE:** A NOTE indicates important information that helps you make better use of your computer.



**CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.



**WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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# Working on Your Computer

## Before Working Inside Your Computer


Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that the following conditions exist:


- You have performed the steps in Working on Your Computer.
- You have read the safety information that shipped with your computer.
- A component can be replaced or--if purchased separately--installed by performing the removal procedure in reverse order.


 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance)

 **CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

 **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface, such as a connector on the back of the computer.

 **CAUTION:** Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

 **CAUTION:** When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

 **NOTE:** The color of your computer and certain components may appear differently than shown in this document.

To avoid damaging your computer, perform the following steps before you begin working inside the computer.

1. Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
2. Turn off your computer (see [Turning Off Your Computer](#)).
3. If the computer is connected to a docking device (docked) such as the optional Media Base or Battery Slice, undock it.

 **CAUTION:** To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

4. Disconnect all network cables from the computer.
5. Disconnect your computer and all attached devices from their electrical outlets.

6. Close the display and turn the computer upside-down on a flat work surface.



**NOTE:** To avoid damaging the system board, you must remove the main battery before you service the computer.

7. Remove the main battery.
8. Turn the computer top-side up.
9. Open the display.
10. Press the power button to ground the system board.



**CAUTION:** To guard against electrical shock, always unplug your computer from the electrical outlet before opening the display.



**CAUTION:** Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.

11. Remove any installed ExpressCards or Smart Cards from the appropriate slots.


## Turning Off Your Computer




**CAUTION:** To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Shut down the operating system:

- In Windows 7:

Click **Start** , then click **Shut Down**.

- In Windows Vista :

Click **Start** , then click the arrow in the lower-right corner of the **Start** menu as shown below, and then click **Shut Down**.



- In Windows XP:

Click **Start** → **Turn Off Computer** → **Turn Off** . The computer turns off after the operating system shutdown process is complete.

2. Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for about 4 seconds to turn them off.

## After Working Inside Your Computer

After you complete any replacement procedure, ensure you connect any external devices, cards, and cables before turning on your computer.



**CAUTION:** To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

1. Connect any external devices, such as a port replicator, battery slice, or media base, and replace any cards, such as an ExpressCard.
2. Connect any telephone or network cables to your computer.



**CAUTION:** To connect a network cable, first plug the cable into the network device and then plug it into the computer.

3. Replace the battery.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.



# Removing and Installing Components

This section provides detailed information on how to remove or install the components from your computer.

## Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Small plastic scribe

## Removing the Battery

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Slide the release latches to unlock the battery.



3. Slide the battery and remove it from the computer.



## Installing the Battery

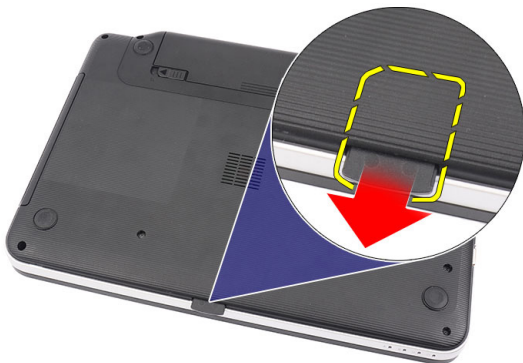
1. Slide the battery into its slot until it clicks into place.
2. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Secure Digital (SD) Card

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Press in on the SD memory card to release it from the computer.



3. Slide the SD memory card out of the computer.



## Installing the Secure Digital (SD) Card

1. Push the memory card into the compartment until it is fully engaged with a click sound.
2. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Hinge Cover

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Remove the screws that secure the hinge cover.



4. Flip the computer around and remove the hinge cover.



## Installing the Hinge Cover

1. Install the hinge cover and press on it to secure its connection to the computer.
2. Flip the computer and install the screws that secure the hinge cover.
3. Install the battery.
4. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Keyboard

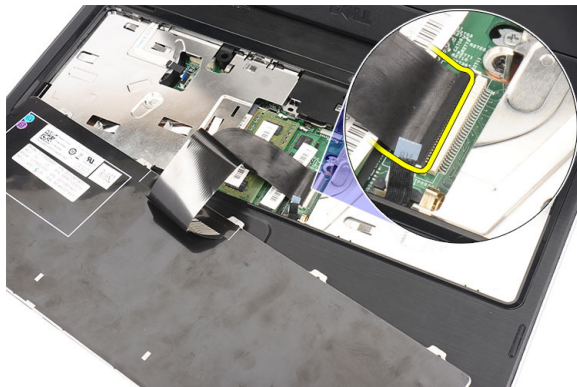
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Starting on the right, pry up the keyboard from the computer.



4. Flip the keyboard over and lay it on the palmrest.



5. Disconnect the keyboard cable from the system board.



6. Remove the keyboard from the computer.





## Installing the Keyboard

1. Connect the keyboard cable to the system board.
2. Insert the keyboard at an angle of 30 degrees to its compartment.
3. Press down on the keyboard until it clicks into place.
4. Install the battery.
5. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Optical Drive

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Remove the keyboard.
4. Remove the screw that secures the optical drive.



5. Use a flat-headed screw driver to pry the optical drive. Slide the optical drive outwards and remove it from the computer.

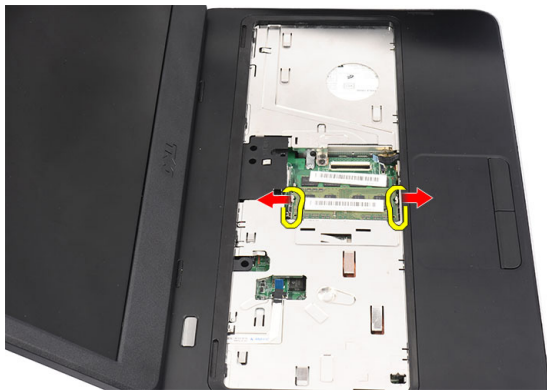


## Installing the Optical Drive

1. Slide the optical drive into the compartment on the left side of the chassis.
2. Tighten the screw to secure the optical drive to the computer.
3. Install the keyboard.
4. Install the battery.
5. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Memory Module

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Remove the keyboard.
4. Pry the retention clips away from the memory module until it pops up.



5. Remove the memory module from the computer.



## Installing the Memory Module

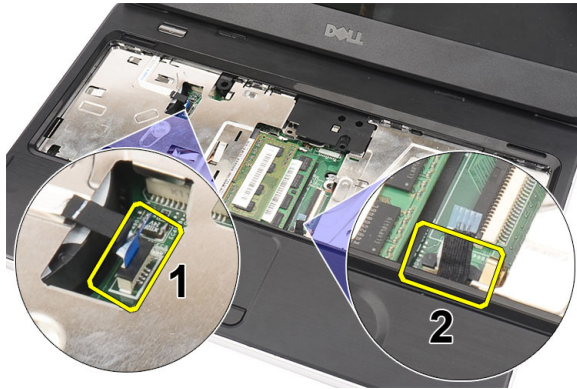
1. Insert the memory module into the memory socket.
2. Press down on the memory module until the retention clips secure the memory module in place.
3. Install the keyboard.
4. Install the battery.
5. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Palmrest

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Remove the keyboard.
4. Remove the screws at the base of the computer.



5. Flip the computer and disconnect the power board cable (1) and the touchpad cable (2).



6. Remove the screws that secure the palmrest to the computer.



7. With a plastic carefully pry up the palmrest along the edges. Lift the palmrest and remove from the computer.



## Installing the Palmrest

1. Insert the palmrest towards the display screen at a 30-degree angle.
2. Starting from the edges of the palmrest, press downwards on the palmrest to engage the tabs on the computer.
3. Connect the power-board cable and touchpad cable to their respective connectors.
4. Install the screws that secure the palmrest to the computer.
5. Flip the computer and install the screws that secure the bottom base.
6. Install the keyboard.
7. Install the battery.

8. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Power-Button Board

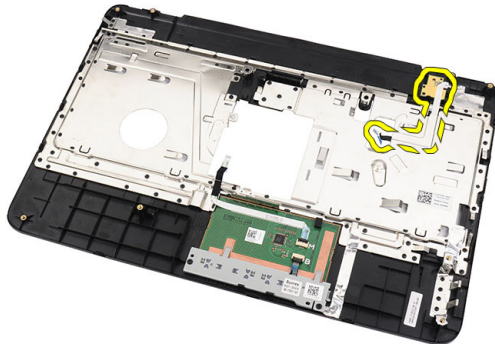
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) keyboard
  - c) palmrest
3. Peel the power-button board cable from the adhesive affixing it to the palmrest.



4. Flip the palmrest and remove the screw that secures the power-button board to the palmrest.



5. Lift up the power-button board and remove the power-button board cable through the opening.

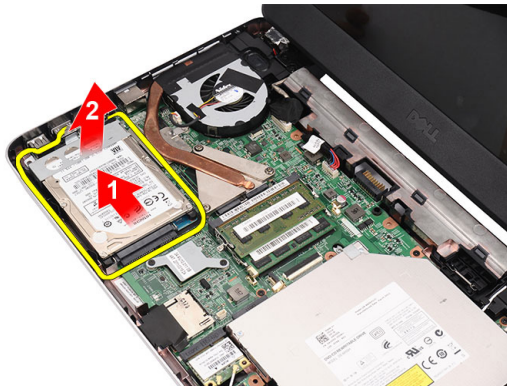


## Installing the Power-Button Board

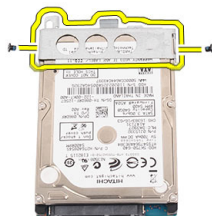
1. Insert the power-button board cable through the opening.
2. Fix the power-button board to its compartment.
3. Install the screw to secure the power-button board.
4. Flip the computer and attach the power-button board cable to the palmrest.
5. Install:
  - a) palmrest
  - b) keyboard
  - c) battery
6. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Hard Drive

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) keyboard
  - c) palmrest
3. Slide the hard drive and lift it out of the computer.



4. Remove the screw that secures the hard-drive bracket and detach it from the hard drive.





## Installing the Hard Drive

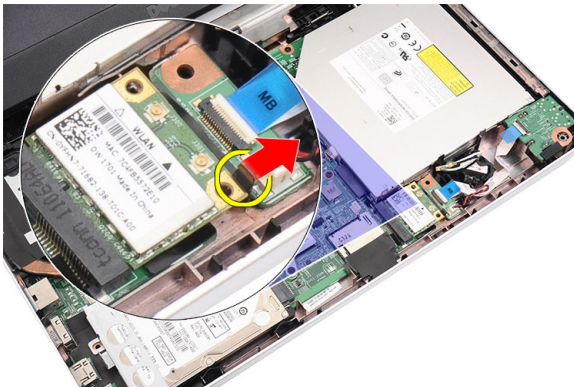
1. Install the hard-drive bracket to the hard drive.
2. Tighten the screw that secures the hard-drive bracket.
3. Place the hard drive in its compartment and slide it towards the SATA connector to secure it to the system board.
4. Install:
  - a) palmrest
  - b) keyboard
  - c) battery
5. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Wireless Local Area Network (WLAN) Card

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) keyboard
  - c) palmrest
3. Disconnect any antennae connected to the WLAN card.



4. Pry the latch to release the WLAN card from its compartment.



5. Remove the WLAN card from the computer.

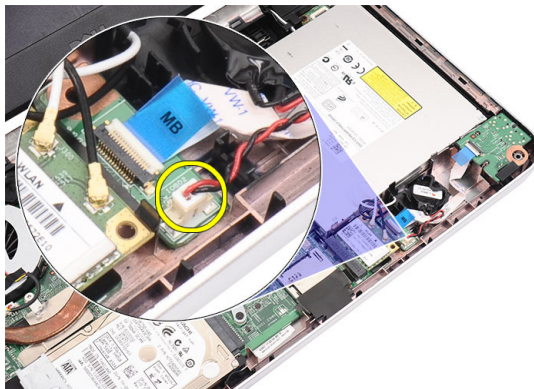


## Installing the Wireless Local Area Network (WLAN) Card

1. Slide the WLAN card into its slot until it clicks into place.
2. Connect the antennae according to the color code on the WLAN card.
3. Install:
  - a) palmrest
  - b) keyboard
  - c) battery
4. Follow the procedures in *After Working Inside Your Computer*.

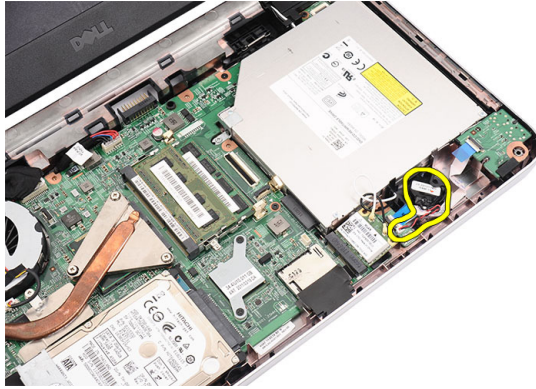
## Removing the Coin-Cell Battery

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) keyboard
  - c) palmrest
3. Disconnect the coin-cell battery cable from the system board.



4. Remove the coin-cell battery from the computer.





## Installing the Coin-Cell Battery

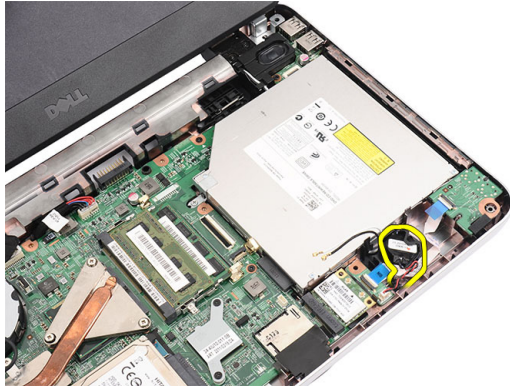
1. Install the coin-cell battery to the coin-cell battery compartment.
2. Connect the coin-cell battery cable to the system board.
3. Install:
  - a) palmrest
  - b) keyboard
  - c) battery
4. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Audio Board

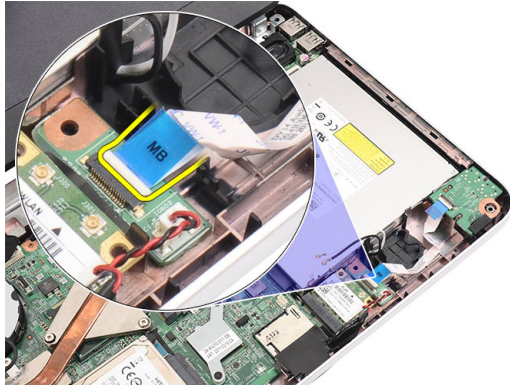
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) keyboard
  - c) palmrest
3. Disconnect the WLAN card antennae hindering access to the audio-board cable.



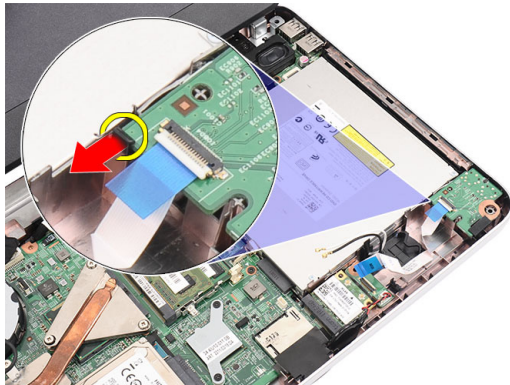
4. Lift up and remove the coin-cell battery from its compartment.



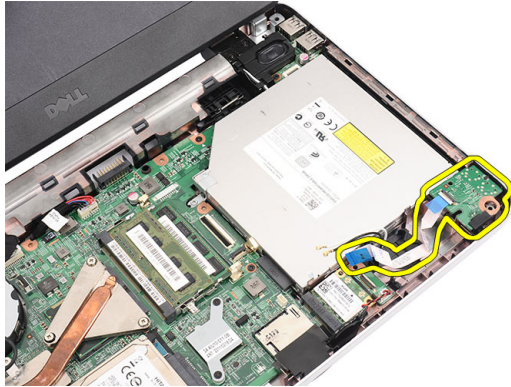
5. Disconnect the audio-board cable from the system board.



6. Pry the latch to release the audio board.



7. Remove the audio board from the computer.

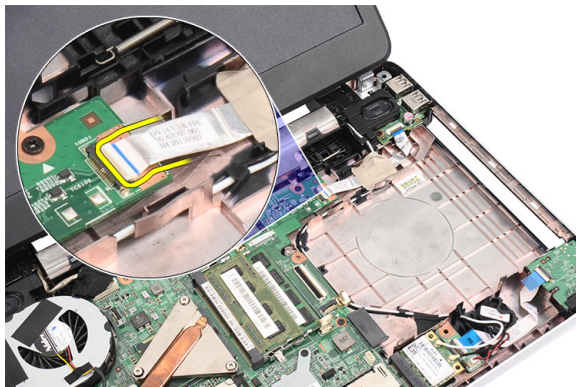


## Installing the Audio Board

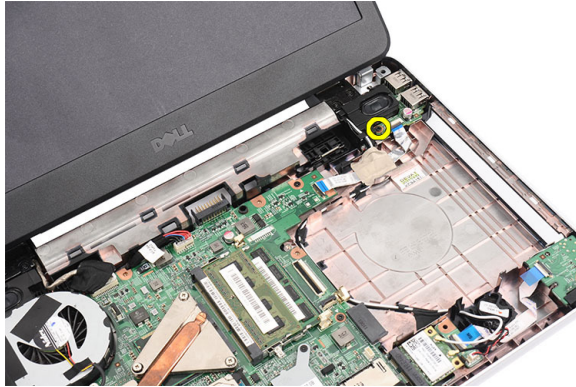
1. Insert the audio board into its compartment and clip on the latch to secure it in place.
2. Connect the audio board cable to the system board.
3. Insert the coin-cell battery cable to its compartment and align it in place.
4. Connect the antennae to the WLAN card.
5. Install:
  - a) palmrest
  - b) keyboard
  - c) battery
6. Follow the procedures in *After Working Inside Your Computer*.

## Removing the USB Board

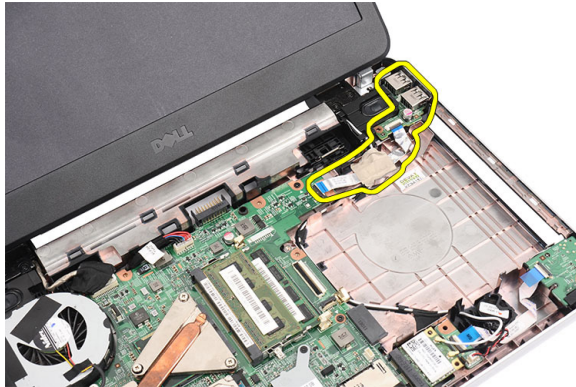
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) keyboard
  - c) optical drive
  - d) palmrest
3. Disconnect the USB board cable from the system board.



4. Remove the screw that secures the USB board.



5. Lift up the USB board and remove it from the computer.



## Installing the USB Board

1. Insert and align the USB board into its compartment on the computer.
2. Install the screw that secures the USB board in place.
3. Connect the USB board cable to the system board.
4. Install:
  - a) palmrest
  - b) optical drive
  - c) keyboard
  - d) battery
5. Follow the procedures in *After Working Inside Your Computer*.

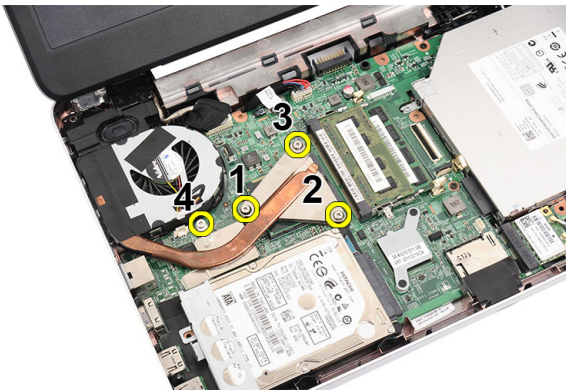
## Removing the Heat-Sink Fan Assembly

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) keyboard
  - c) palmrest
3. Disconnect the CPU-fan cable from the system board.

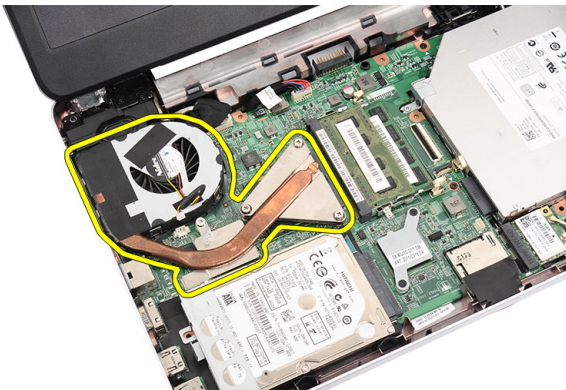




4. Remove the captive screws that secure the heat-sink fan assembly by following the sequence in the image.



5. Remove the heat-sink fan assembly from the computer.



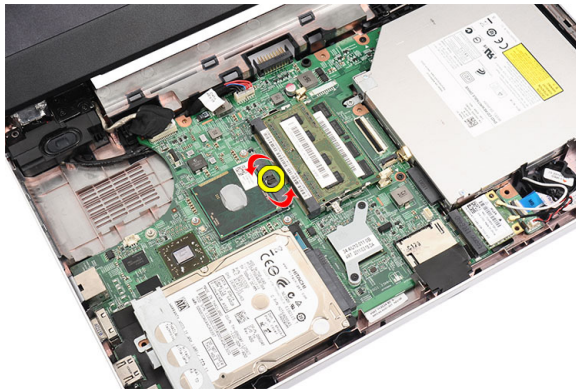
## Installing the Heat-Sink Fan Assembly

1. Place and align the heat-sink fan assembly.
2. Tighten the captive screws to secure the heat-sink fan assembly.
3. Connect the CPU fan cable to the system board.
4. Install:
  - a) palmrest
  - b) keyboard
  - c) battery

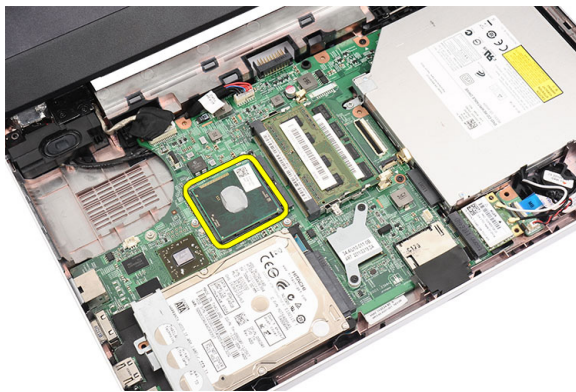
5. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Processor

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) keyboard
  - c) palmrest
  - d) heat-sink fan assembly
3. Rotate the processor-cam screw in a counter-clockwise direction.



4. Lift up the processor and remove it from the computer.

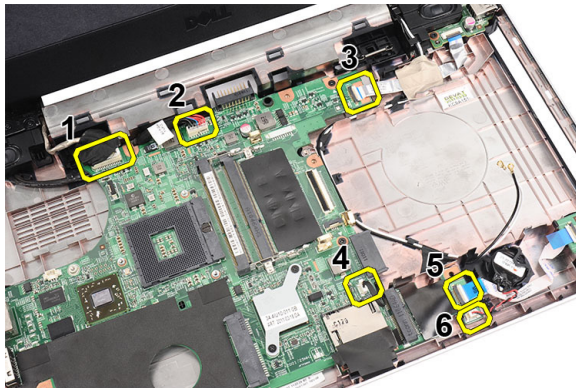


## Installing the Processor

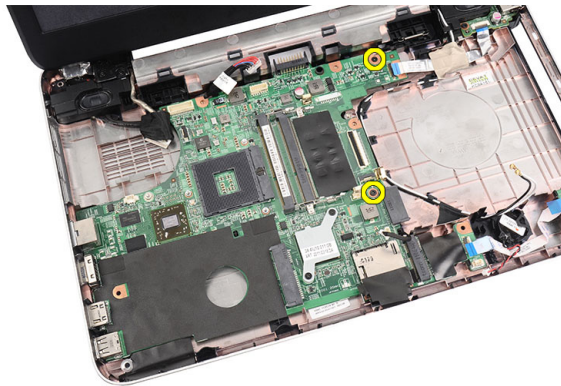
1. Insert the processor into the processor socket. Ensure the processor is properly seated.
2. Tighten the cam-screw in a clockwise direction to the locked position.
3. Install:
  - a) heat-sink fan assembly
  - b) palmrest
  - c) keyboard
  - d) battery
4. Follow the procedures in *After Working Inside Your Computer*.

## Removing the System Board

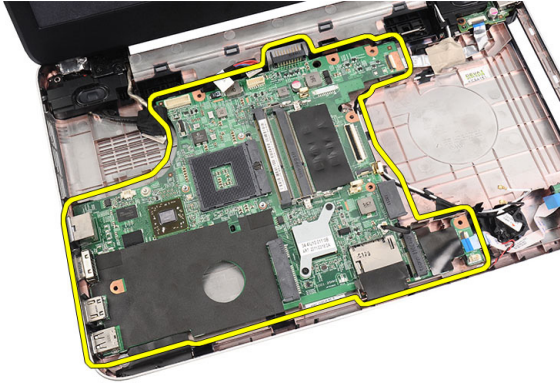
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) SD memory card
  - c) keyboard
  - d) optical drive
  - e) memory module
  - f) plamrest
  - g) hard drive
  - h) WLAN card
  - i) heat-sink fan assembly
  - j) processor
3. Disconnect the display cable (1), power connector (2), USB board cable (3), speaker cable (4), audio board cable (5), and the coin-cell battery cable (6).



4. Remove the screws that secure the system board.



5. Lift up the system board at an angle and slide it out from the LAN, VGA, HDMI, and USB sockets.



## Installing the System Board

1. Insert the system board with the LAN, VGA, HDMI, and USB connectors into their respective sockets and align the system board in place.
2. Install the screws that secure the system board in place.
3. Connect the LCD cable, power connector cable, USB board cable, audio board cable, coin-cell battery cable, and the speaker cable.
4. Install:
  - a) processor
  - b) heat sink fan assembly
  - c) WLAN card
  - d) hard drive
  - e) palmrest
  - f) memory module
  - g) optical drive
  - h) keyboard
  - i) SD memory card
  - j) battery
5. Follow the procedures in *After Working Inside Your Computer*.

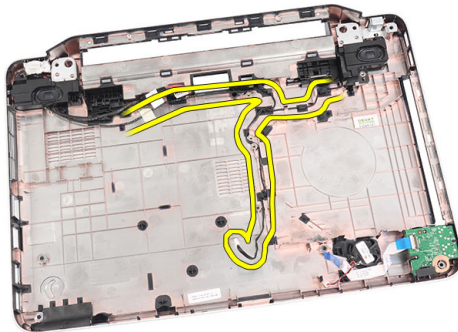
## Removing the Speakers

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) SD memory card
  - c) keyboard
  - d) optical drive
  - e) memory module
  - f) palmrest
  - g) hard drive
  - h) WLAN card
  - i) USB Board
  - j) heat-sink fan assembly
  - k) processor
  - l) system board

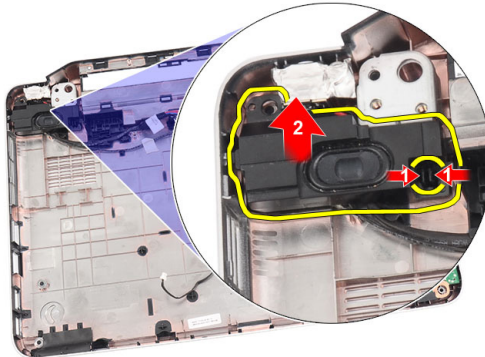


- m) hinge cover
- n) display assembly

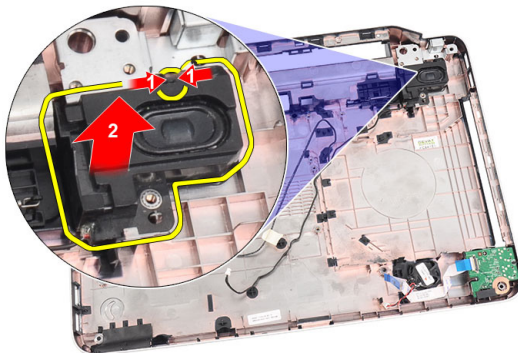
3. Release the speaker cable from the routing channel.



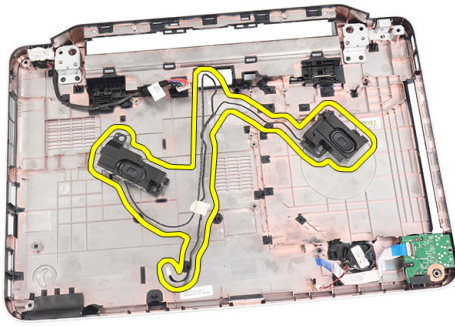
4. Press the securing latches and lift up the left speaker.



5. Press the securing latches and lift up the right speaker.



6. Remove the speaker assembly and the speaker cable from the computer.

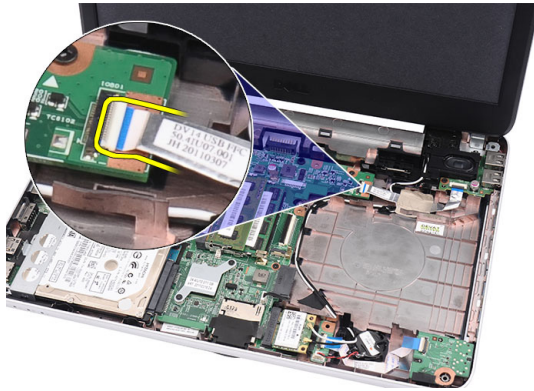


## Installing the Speakers

1. Insert and attach the left and right speakers into their respective compartments.
2. Align and route the speaker cable to the chassis.
3. Install:
  - a) display assembly
  - b) hinge cover
  - c) system board
  - d) processor
  - e) heat-sink fan assembly
  - f) USB board
  - g) WLAN card
  - h) hard drive
  - i) palmrest
  - j) memory module
  - k) optical drive
  - l) keyboard
  - m) SD memory card
  - n) battery
4. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Display Assembly

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) hinge cover
  - c) keyboard
  - d) optical drive
  - e) palmrest
3. Disconnect the USB board cable from the system board to allow access to the WLAN antennae.



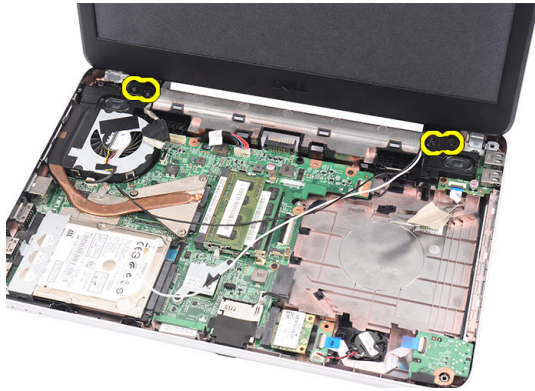
4. Disconnect the WLAN antennae and release it from the routing channel on the chassis.



5. Disconnect the display cable from the system board.



6. Remove the screw that secures the left and right hinges.



7. Lift up the display assembly from the computer and remove.

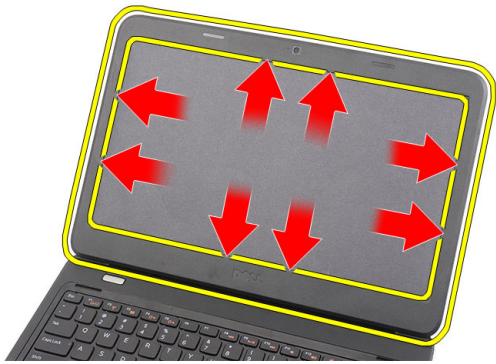


## Installing the Display Assembly

1. Insert the display assembly hinges into their holders.
2. Install the screw that secures the right and left hinges in place.
3. Connect the display cable to the system board.
4. Align the WLAN antennae routing cable to its holder and connect the antennae to the WLAN card.
5. Connect the USB board cable.
6. Install:
  - a) palmrest
  - b) optical drive
  - c) keyboard
  - d) hinge cover
  - e) battery
7. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Display Bezel

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Starting from the bottom, pry the bezel inside out from the display assembly and work your way to the right and the left corners of the display bezel.



4. Remove the bezel from the display assembly.

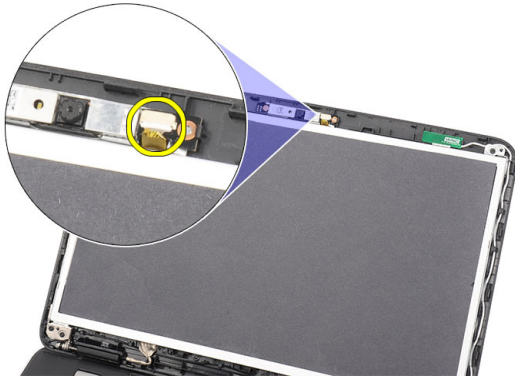


## Installing the Display Bezel

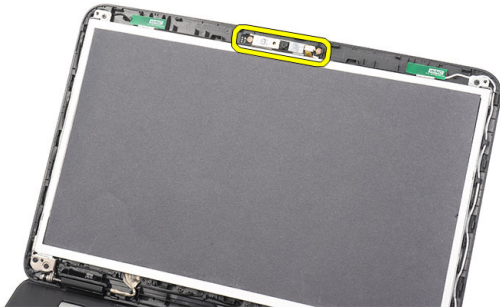
1. Align the display bezel in line with the top cover.
2. Starting from the bottom edge, press downward on the display bezel to engage the tabs.
3. Install the battery.
4. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Camera

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Remove the display bezel.
4. Disconnect the camera cable from the camera module.



5. Pry the latch, lift up the camera, and remove it from the computer.



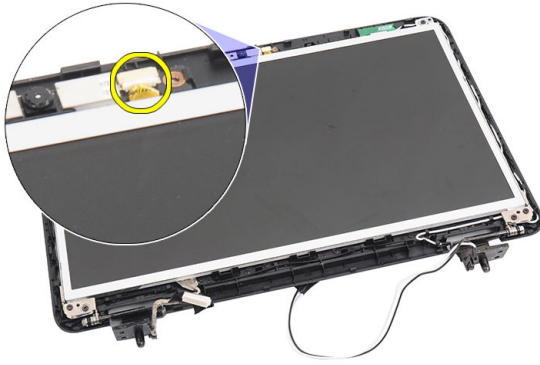
## Installing the Camera

1. Insert and align the camera module to its compartment.
2. Connect the camera cable to the camera module.
3. Install the display bezel.
4. Install the battery.
5. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Display Panel

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) hinge cover
  - c) keyboard
  - d) optical drive
  - e) palmrest
  - f) display assembly
  - g) display bezel
3. Disconnect the camera cable from the camera module.

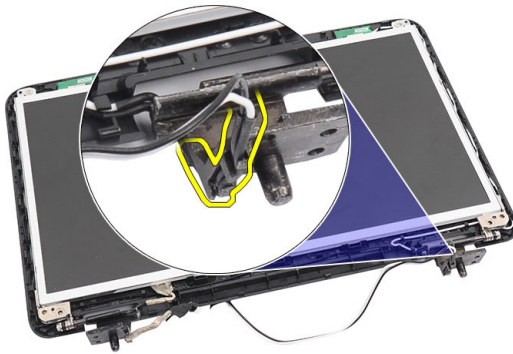




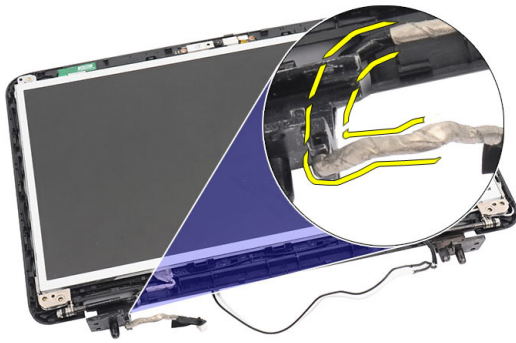
4. Remove the screws that secure the display brackets and hinges.



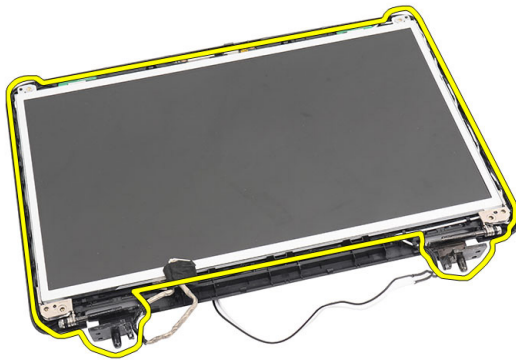
5. Release the wireless antennae from the right hinge.



6. Release the display cable from the left hinge.



7. Lift up the display panel and brackets from the display top cover.



8. Remove the screws on the left and right display brackets and remove the display panel.



## Installing the Display Panel

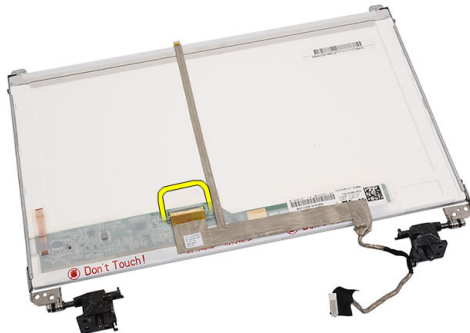
1. Attach the left and right brackets to the display panel and secure the screws.
2. Insert and route the display cable and wireless antennae to the left and right hinges.
3. Align the display panel with its brackets to the top cover.
4. Align the WLAN antennae routing cable to its holder and connect the antennae to the WLAN card.
5. Install the screws that secure the display panel and the brackets.
6. Connect the camera cable to the camera module.
7. Install:



- a) display bezel
  - b) display assembly
  - c) palmrest
  - d) optical drive
  - e) keyboard
  - f) hinge cover
  - g) battery
8. Follow the procedures in *After Working Inside Your Computer*.

## Removing the Display Cable

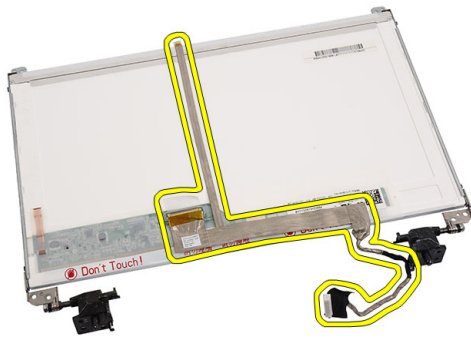
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
  - a) battery
  - b) hinge cover
  - c) keyboard
  - d) optical drive
  - e) palmrest
  - f) display assembly
  - g) display bezel
  - h) display panel
3. Peel off the tape covering the display connection.



4. Disconnect the display cable from the display panel.



5. Peel off the entire display cable from the adhesive affixing it to the display panel and remove.



## Installing the Display Cable

1. Attach the display cable to the display panel.
2. Connect the display cable to the display panel and affix the tape securing them.
3. Install:
  - a) display panel
  - b) display bezel
  - c) display assembly
  - d) palmrest
  - e) optical drive
  - f) keyboard
  - g) hinge cover
  - h) battery
4. Follow the procedures in *After Working Inside Your Computer*.

# System Setup

System Setup enables you to manage your computer hardware and specify BIOS-level options. From the System Setup, you can:

- Change the NVRAM settings after you add or remove hardware
- View the system hardware configuration
- Enable or disable integrated devices
- Set performance and power management thresholds
- Manage your computer security

## Boot Sequence

Boot Sequence allows you to bypass the System Setup-defined boot device order and boot directly to a specific device (for example: optical drive or hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:

- Access System Setup by pressing <F2> key
- Bring up the one-time boot menu by pressing <F12> key

The one-time boot menu displays the devices that you can boot from including the diagnostic option. The boot-menu options are:

- Removable Drive (if available)
- STXXXX Drive



**NOTE:** XXX denotes the SATA drive number.

- Optical Drive
- Diagnostics



**NOTE:** Choosing Diagnostics, will display the **ePSA diagnostics** screen.

The boot sequence screen also displays the option to access the System Setup screen.

## Navigation Keys


The following table displays the system setup navigation keys.



**NOTE:** For most of the system setup options, changes that you make are recorded but do not take effect until you restart the system.

**Table 1. Navigation Keys**

| Keys       | Navigation                   |
|------------|------------------------------|
| Up arrow   | Moves to the previous field. |
| Down arrow | Moves to the next field.     |

| Keys     | Navigation   |
|----------|--|
| <Enter>  | Allows you to select a value in the selected field (if applicable) or follow the link in the field.  |
| Spacebar | Expands or collapses a drop-down list, if applicable.  |
| <Tab>    | Moves to the next focus area.  |
|          |  <b>NOTE:</b> For the standard graphics browser only.   |
| <Esc>    | Moves to the previous page till you view the main screen. Pressing <Esc> in the main screen displays a message that prompts you to save any unsaved changes and restarts the system. |
| <F1>     | Displays the System Setup help file.   |

## System Setup Options

### Main

|                    |  |
|--------------------|--|
| System Information | Displays the computer model number.                          |
| System Date        | Re-sets the date on the computer's internal calendar.        |
| System Time        | Re-sets the time on the computer's internal clock.           |
| BIOS Version       | Displays the BIOS revision.                                  |
| Product Name       | Displays the product name and the model number.              |
| Service Tag        | Displays the service tag of your computer.                   |
| Asset Tag          | Displays the asset tag of your computer (if available).      |
| CPU Type           | Displays the type of processor.                              |
| CPU Speed          | Displays the speed of the processor.                         |
| CPU ID             | Displays the processor ID.                                   |
| L1 Cache Size      | Displays the processor L1 cache size.                        |
| L2 Cache Size      | Displays the processor L2 cache size.                        |
| L3 Cache Size      | Displays the processor L3 cache size.                        |
| Extended Memory    | Displays the memory installed on the computer.               |
| System Memory      | Displays the memory in-built on the computer.                |
| Memory Speed       | Displays the memory speed.                                   |
| Fixed HDD          | Displays the model number and capacity of the hard drive.    |
| SATA ODD           | Displays the model number and capacity of the optical drive. |
| AC Adapter Type    | Displays the type of the AC adapter.                         |

## Advanced

|                       |   |                             |
|-----------------------|---|-----------------------------|
| Intel SpeedStep       | Enable or disable the Intel SpeedStep feature.  | Default: Enabled            |
| Virtualization        | Enable or disable the Intel Virtualization feature.   | Default: Enabled            |
| Integrated NIC        | Enable or disable the power supply to the on-board network card.  | Default: Enabled            |
| USB Emulation         | Enable or disable the USB emulation feature.  | Default: Enabled            |
| USB Wake Support      | Allows USB devices to wake-up the computer from standby. This feature is enabled only when the AC adapter is connected. | Default: Disabled           |
| SATA Operation        | Change the SATA controller mode to either ATA or AHCI.  | Default: AHCI               |
| Adapter Warnings      | Enables or disables adapter warnings.   | Default: Enabled            |
| Function Key Behavior | Specifies the behavior of the function key <Fn> .   | Default: Function key first |
| Charger Behavior      | Specifies if the computer battery will be charged when connected to an AC power source.                                 | Default: Enabled            |
| Miscellaneous Devices | These fields let you enable or disable various on-board devices.  |                             |

## Security

|                         |  |
|-------------------------|--|
| Set Service Tag         | This field displays your system's service tag. If the service tag is not already set, this field can be used to enter it.            |
| Set Supervisor Password | Allows you to change or delete the administrator password.   |
| Set HDD Password        | Allows you to set a password on the computer's internal hard drive (HDD).  |
| Password Bypass         | Allows you to bypass the system password and the internal HDD password prompts during a system restart/ resume from hibernate state. |
| Computrace              | Enable or disable the Computrace feature on your computer.   |

## Boot



|                     |   |
|---------------------|---|
| Boot Priority Order | Specifies the order of different devices in which the computer will boot through at start up. |
| Hard Disk Drives    | Specifies which hard drive the computer can boot through.                                     |
| USB Storage Device  | Specifies which USB storage device the computer can boot through.                             |
| CD/DVD ROM Drives   | Specifies which CD/DVD the computer can boot through.   |
| Network             | Specifies which network device the computer can boot through.                                 |

## Exit

This section allows you to save, discard, and load default settings before exiting from System Setup.

## Updating the BIOS

It is recommended to update your BIOS (system setup), on replacing the system board or if an update is available. For notebooks, ensure that your computer battery is fully charged and connected to a power outlet

1. Restart the computer.
2. Go to [support.dell.com/support/downloads](http://support.dell.com/support/downloads).
3. If you have your computer's Service Tag or Express Service Code:
  -  **NOTE:** For desktops, the service tag label is available on the front of your computer.
  -  **NOTE:** For notebooks, the service tag label is available on the bottom of your computer.
  - a) Enter the **Service Tag** or **Express Service Code** and click **Submit**.
  - b) Click **Submit** and proceed to step 5.
4. If you do not have your computer's service tag or express service code, select one of the following:
  - a) **Automatically detect my Service Tag for me**
  - b) **Choose from My Products and Services List**
  - c) **Choose from a list of all Dell products**
5. On the application and drivers screen, under the **Operating System** drop-down list, select **BIOS**.
6. Identify the latest BIOS file and click **Download File**.
7. Select your preferred download method in the **Please select your download method below window**; click **Download Now**.

The **File Download** window appears.
8. Click **Save** to save the file on your computer.
9. Click **Run** to install the updated BIOS settings on your computer.


Follow the instructions on the screen.


## System and Setup Password

You can create a system password and a setup password to secure your computer.

| Password Type          | Description  |
|------------------------|--|
| <b>System password</b> | Password that you must enter to log on to your system.   |
| <b>Setup password</b>  | Password that you must enter to access and make changes to the BIOS settings of your computer. |


 **CAUTION:** The password features provide a basic level of security for the data on your computer.

 **CAUTION:** Anyone can access the data stored on your computer if it is not locked and left unattended.

 **NOTE:** Your computer is shipped with the system and setup password feature disabled.

## Assigning a System Password and Setup Password

You can assign a new **System Password** and/or **Setup Password** or change an existing **System Password** and/or **Setup Password** only when **Password Status** is **Unlocked**. If the Password Status is **Locked**, you cannot change the System Password.

 **NOTE:** If the password jumper is disabled, the existing System Password and Setup Password is deleted and you need not provide the system password to log on to the computer.

To enter a system setup, press <F2> immediately after a power-on or reboot.

1. In the **System BIOS** or **System Setup** screen, select **System Security** and press <Enter>. The **System Security** screen appears.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password**, enter your system password, and press <Enter> or <Tab>. Use the following guidelines to assign the system password:
  - A password can have up to 32 characters.
  - The password can contain the numbers 0 through 9.
  - Only lower case letters are valid, upper case letters are not allowed.
  - Only the following special characters are allowed: space, ("), (+), (,), (-), (.), (/), (;), (I), (\), (l), (^).

Re-enter the system password when prompted.


4. Type the system password that you entered earlier and click **OK**.
5. Select **Setup Password**, type your system password and press <Enter> or <Tab>. A message prompts you to re-type the setup password.
6. Type the setup password that you entered earlier and click **OK**.
7. Press <Esc> and a message prompts you to save the changes.
8. Press <Y> to save the changes. The computer reboots.

## Deleting or Changing an Existing System and/or Setup Password

Ensure that the **Password Status** is **Unlocked** (in the System Setup) before attempting to delete or change the existing System and/or Setup password. You cannot delete or change an existing System or Setup password, if the **Password Status** is **Locked**.

To enter the System Setup, press <F2> immediately after a power-on or reboot.



1. In the **System BIOS** or **System Setup** screen, select **System Security** and press <Enter>. The **System Security** screen is displayed.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password**, alter or delete the existing system password and press <Enter> or <Tab>.
4. Select **Setup Password**, alter or delete the existing setup password and press <Enter> or <Tab>.  
 **NOTE:** If you change the System and/or Setup password, re-enter the new password when promoted. If you delete the System and/or Setup password, confirm the deletion when promoted.
5. Press <Esc> and a message prompts you to save the changes.
6. Press <Y> to save the changes and exit from the System Setup.  
The computer reboots.

# Diagnostics

If you experience a problem with your computer, run the ePSA diagnostics before contacting Dell for technical assistance. The purpose of running diagnostics is to test your computer's hardware without requiring additional equipment or risking data loss. If you are unable to fix the problem yourself, service and support personnel can use the diagnostics results to help you solve the problem.

## Enhanced Pre-Boot System Assessment (ePSA) Diagnostics

The ePSA diagnostics (also known as system diagnostics) performs a complete check of your hardware. The ePSA is embedded with the BIOS and is launched by the BIOS internally. The embedded system diagnostics provides a set of options for particular devices or device groups allowing you to:

- Run tests automatically or in an interactive mode
- Repeat tests
- Display or save test results
- Run thorough tests to introduce additional test options to provide extra information about the failed device(s)
- View status messages that inform you if tests are completed successfully
- View error messages that inform you of problems encountered during testing



**CAUTION:** Use the system diagnostics to test only your computer. Using this program with other computers may cause invalid results or error messages.



**NOTE:** Some tests for specific devices require user interaction. Always ensure that you are present at the computer terminal when the diagnostic tests are performed.

1. Power-on the computer.
2. As the computer boots, press the <F12> key as the Dell logo appears.
3. On the boot menu screen, select the **Diagnostics** option.  
The **Enhanced Pre-boot System Assessment** window is displayed, listing all devices detected in the computer. The diagnostics starts running the tests on all the detected devices.
4. If you wish to run a diagnostic test on a specific device, press <Esc> and click **Yes** to stop the diagnostic test.
5. Select the device from the left pane and click **Run Tests**.
6. If there are any issues, error codes are displayed.  
Note the error code and contact Dell.

## Battery Status Lights

If the computer is connected to an electrical outlet, the battery light operates as follows:

- **Alternately blinking amber light and white light** — An unauthenticated or unsupported non-Dell AC adapter is attached to your laptop.
- **Alternately blinking amber light with steady white light** — Temporary battery failure with AC adapter present.
- **Constantly blinking amber light** — Fatal battery failure with AC adapter present.

- **Light off** — Battery in full charge mode with AC adapter present.
- **White light on** — Battery in charge mode with AC adapter present.

## Device Status Lights



Turns on when you turn on the computer and blinks when the computer is in a power management mode.



Turns on when the computer reads or writes data.



Turns on steadily or blinks to indicate battery charge status.



Turns on when wireless networking is enabled.


## Diagnostic Beep Codes

The computer may emit a series of beeps during start-up if the display cannot show errors or problems. These series of beeps, called beep codes, identify various problems. The delay between each beep is 300 ms, the delay between each set of beeps is 3 seconds, and the beep sound lasts 300 ms. After each beep and each set of beeps, the BIOS should detect if the user presses the power button. If so, BIOS will jump out from looping and execute the normal shutdown process and power system.

| Code | Cause and Troubleshooting Steps  |
|------|--|
| 1    | BIOS ROM checksum in progress or failure<br>System board failure, covers BIOS corruption or ROM error  |
| 2    | No RAM detected<br>No memory detected  |
| 3    | Chipset Error (North and South Bridge Chipset, DMA/IMR/ Timer Error) , Time-Of-Day Clock test failure , Gate A20 failure , Super I/O chip failure , Keyboard controller test failure<br>System board failure |
| 4    | RAM Read/Write failure<br>Memory failure   |
| 5    | Real-time clock power fail<br>CMOS battery failure   |
| 6    | Video BIOS test failure<br>Video card failure  |
| 7    | Processor failure<br>Processor failure   |
| 8    | Display<br>Display failure   |

# Technical Specifications



**NOTE:** Offerings may vary by region. For more information regarding the configuration of your computer, click Start  (Start icon) → **Help and Support**, and then select the option to view information about your computer.

**Table 2. System Information**

| Feature        | Specification              |
|----------------|----------------------------|
| Chipset        | Intel HM75 Express chipset |
| DRAM bus width | 64-bit                     |
| Flash EPROM    | SPI 32 Mbits               |

**Table 3. Processor**

| Feature  | Specification   |
|----------|---|
| Types    | <ul style="list-style-type: none"> <li>• Intel Celeron</li> <li>• Intel Core i3 series</li> <li>• Intel Core i5 series</li> </ul> |
| L2 cache | up to 6 MB  |

**Table 4. Memory**

| Feature          | Specification                      |
|------------------|------------------------------------|
| Memory connector | two SODIMM slots                   |
| Memory capacity  | 2 GB or 4 GB                       |
| Memory type      | DDR3 SDRAM (1333 MHz and 1600 MHz) |
| Minimum memory   | 1 GB                               |
| Maximum memory   | 8 GB                               |

**Table 5. Audio**

| Feature           | Specification                                    |
|-------------------|--|
| Type              | 2.1 channel high definition audio                |
| Controller        | Cirrus Logic CS4213D                             |
| Stereo conversion | 24-bit (analog-to-digital and digital-to-analog) |
| Interface:        |  |
| Internal          | high definition audio                            |

| Feature         | Specification   |
|-----------------|---|
| External        | microphone-in/stereo headphones/external speakers connector |
| Speakers        | 2 x 2 Watt  |
| Volume controls | keyboard function keys and program menus                    |

**Table 6. Video**

| Feature                | Specification   |
|------------------------|---|
| Video type             | <ul style="list-style-type: none"> <li>integrated on system board</li> <li>discrete</li> </ul>                                      |
| Data bus:              |   |
| UMA                    | integrated video  |
| Discrete               | <ul style="list-style-type: none"> <li>PCI-E x16 Gen1</li> <li>PCI-E x16 Gen2</li> </ul>  |
| Video controller:      |   |
| UMA                    | <ul style="list-style-type: none"> <li>Intel HD Graphics</li> <li>Intel HD Graphics 3000</li> <li>Intel HD Graphics 4000</li> </ul> |
| Discrete (Vostro 2420) | nVidia GeForce GT 620M  |

**Table 7. Camera**

| Feature                    | Specification       |
|----------------------------|---------------------|
| Camera resolution          | 1.3 Mega-pixel      |
| Video resolution (maximum) | 640 x 480 at 30 FPS |

**Table 8. Communications**

| Feature         | Specification                               |
|-----------------|---|
| Network adapter | 10/100/1000 Mbps Ethernet LAN               |
| Wireless        | internal wireless local area network (WLAN) |

**Table 9. Ports and Connectors**

| Feature | Specification   |
|---------|---|
| Audio   | one microphone connector; one stereo headphone/speakers connector   |
| Video   | <ul style="list-style-type: none"> <li>one 15-pin VGA connector</li> <li>one 19-pin HDMI connector</li> </ul> |

| Feature           | Specification                             |
|-------------------|---|
| Network adapter   | one RJ-45 connector                       |
| USB               | three 4-pin USB, 2.0-compliant connectors |
| Media card reader | one 3-in-1 (SD/MMC/MS)                    |

**Table 10. Display**

| Feature                 | Vostro 2420                      | Vostro 2520              |
|-------------------------|----------------------------------|--------------------------|
| Type                    | HD WLED TrueLife; HD WLED AG     |                          |
| Size                    | 14.0 inches                      | 15.0 inches              |
| Dimensions:             |                                  |                          |
| Height                  | 192.50 mm (7.58 inches)          | 193.50 mm (7.62 inches)  |
| Width                   | 324.00 mm (12.76 inches)         | 344.20 mm (13.55 inches) |
| Diagonal                | 355.60 mm (14.00 inches)         | 396.24 mm (15.60 inches) |
| Active area (X/Y)       | 309.40 mm x 173.95 mm            | 344.23 mm x 193.54 mm    |
| Maximum brightness      | 200 nits                         | 220 nits                 |
| Maximum resolution      | 1366 x 768 pixels at 262K colors |                          |
| Operating angle         | 0° (closed) to 140°              |                          |
| Refresh rate            | 60 Hz                            |                          |
| Minimum viewing angles: |                                  |                          |
| Horizontal              | 40°/40°                          |                          |
| Vertical                | 15°/30° (H/L)                    |                          |
| Pixel pitch             | 0.252 mm X 0.252 mm              |                          |

**Table 11. Keyboard**

| Feature        | Specification  |
|----------------|--|
| Number of keys | <ul style="list-style-type: none"> <li>• United States and Canada</li> <li>• 86 keys, Europe and Brazil 87 keys</li> <li>• Japan: 90 keys</li> </ul> |

**Table 12. Touchpad**

| Feature      | Specification          |
|--------------|------------------------|
| Active Area: |                        |
| X-axis       | 90.00 mm (3.54 inches) |
| Y-axis       | 49.00 mm (1.93 inches) |

**Table 13. Battery**

| Feature            | Specification   |
|--------------------|---|
| Type               | 6-cell lithium ion (2.20 Whr)                           |
| Dimensions:        |   |
| Height             | 20.20 mm (0.80 inch)                                    |
| Width              | 208.36 mm (8.20 inches)                                 |
| Depth              | 56.52 mm (2.22 inches)                                  |
| Weight             | 0.33 kg (0.73 lb)                                       |
| Charge time        | approximately 4 hours (when the computer is turned off) |
| Voltage            | 11.1 VDC  |
| Temperature range: |   |
| Operating          | 0 °C to 35 °C (32 °F to 95 °F)                          |
| Non-operating      | –40 °C to 65 °C (–40 °F to 149 °F)                      |
| Coin-cell battery  | 3 V CR2032 lithium coin cell                            |

**Table 14. AC Adapter**

| Feature  | Specification               |
|--|-----------------------------|
| Type:  |                             |
| Vostro 2420 / Vostro 2520 with integrated video card | 65 W                        |
| Vostro 2420 with discrete video card                 | 90 W                        |
| Input voltage  | 100 VAC to 240 VAC          |
| Input current (maximum)                              | 1.50 A/1.60 A/1.70 A/2.50 A |
| Input frequency                                      | 50 Hz to 60 Hz              |
| Output power   | 65 W and 90 W               |
| Output current:                                      |                             |
| 65 W   | 3.34 A (continuous)         |
| 90 W   | 4.62 A                      |
| Rated output voltage                                 | 19.50 VDC (+/– 1.0 VDC)     |
| Dimensions:  |                             |
| Height   | 28.20 mm (1.11 inches)      |
| Width  | 57.90 mm (2.28 inches)      |
| Depth  | 137.16 mm (5.40 inches)     |
| Temperature range:                                   |                             |



| Feature       | Specification                      |
|---------------|------------------------------------|
| Operating     | 0 °C to 40 °C (32 °F to 104 °F)    |
| Non-operating | –40 °C to 70 °C (–40 °F to 158 °F) |

**Table 15. Physical**

| Feature                    | Specification                                     |
|----------------------------|---|
| Vostro 2420:               |   |
| Height (with a WLED panel) | 31.50 mm to 34.70 mm (1.24 inches to 1.36 inches) |
| Width                      | 342.00 mm (13.46 inches)                          |
| Depth                      | 244 mm (9.60 inches)                              |
| Weight (minimum)           | 2.2 kg (4.85 lb)                                  |
| Vostro 2520:               |   |
| Height (with a WLED panel) | 31.50 mm to 34.50 mm (1.24 inches to 1.35 inches) |
| Width                      | 376.00 mm (14.80 inches)                          |
| Depth                      | 260 mm (10.23 inches)                             |
| Weight (minimum)           | 2.37 kg (5.22 lb)                                 |

**Table 16. Environmental**

| Feature                      | Specification                             |
|------------------------------|---|
| Temperature:                 |   |
| Operating                    | 0 °C to 35 °C (32 °F to 95 °F)            |
| Storage                      | –40 °C to 65 °C (–40 °F to 149 °F)        |
| Relative humidity (maximum): |   |
| Operating                    | 10 % to 90 % (non-condensing)             |
| Storage                      | 5 % to 95 % (non-condensing)              |
| Altitude (maximum):          |   |
| Operating                    | –15.2 m to 3048 m (–50 ft to 10,000 ft)   |
| Non-operating                | –15.2 m to 10,668 m (–50 ft to 35,000 ft) |
| Airborne contaminant level   | G1 as defined by ISA-71.04–1985           |



## Contacting Dell



**NOTE:** If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Visit **support.dell.com**.
2. Select your support category.
3. If you are not a U.S. customer, select your country code at the bottom of the **support.dell.com** page, or select **All** to see more choices.
4. Select the appropriate service or support link based on your need.